promote Christian ideals for agriculture and rural life; to interpret the spiritual and religious values which here in the processes of agriculture and the relationships of rural life; to magnify and dignify the rural church; provide a means of fellowship and cooperation among rural agencies: *Toward a Christian Rural Civilization.*"

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PACIFIC SCHOOL OF RELIGION

The Mechanization of Agriculture

A British Viewpoint

by Mr. J. E. Hosking*

I would like to make it quite clear at the outset that I recognize a vast difference between advocating the right use of the machine and denouncing it. Machines are not in themselves evil, but they permit of evil. This is not a statement to evoke hostility; it calls for dispassionate reflection at least, on the part of those interested in the future of rural society.

Man in agriculture first designed tools to aid him in the production of food. Food being an essential to life, the primary motive was good. It is the motive which determines the use to which the tool or machine is put that is the all-important factor -- not the machine itself. For example, there are many uses for a knife in the hands of a craftsman; but the same tool in the hands of a bandit is a devilish instrument endangering society.

The agricultural machine is an elaboration of the tool. We know from our experience in the garden that all the necessary cultivations can be performed by a skilled gardener with simple tools -- the fork and spade. Elaborate machines have not come to the farm of their own volition; there has been some motive behind their construction in ever-increasing quantities, for we can disregard any suggestion that they have been made for the sheer pleasure of making them. As the best field-cultivation does not equal the best garden-cultivation, we may fairly assume that the machine was not introduced to excel the quality of the gardener's work, or because he was unable by hand to produce enough for his family's needs. Clearly there has been some other motive.

Modern society congregates in towns, where land is regarded as more

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The British Council for Church and Countryside is a body created to advise the church in matters relating to land and husbandry. It is particularly concerned to uphold the spiritual and cultural aspects of husbandry and to insure that they are not subordinated to the claims of technological development. The mechanization of agriculture is a vital issue in England today. But it is not to be regarded as a polemic battle between "idealistic saints and materialistic sinners." Rather, in the words of the distinguished judge who presided at the conference, it is "a strife between competing patriots in a joint endeavor to achieve national good with due regard to spiritual values."

valuable for building than for cultivation; thus the daily bread of the people cannot be provided from gardens, which give way to the larger acreages of arable farming. At first small fields were cultivated with hand tools; later, larger fields with implements drawn by animals. Later still, animals gave way to mechanical traction; and now we have a great number and variety of self-propelled machines, with a growing tendency to enlarge fields to accommodate them. On some farms the cost of the machinery almost equals the money value of the land. When this stage is reached, the farming system must be adapted to the comparatively inflexible machine, which does its best work on standardized material and in standardized conditions. But living things -- and soil and weather -- cannot be standardized, nor will they conform to the formulae of the mathematician, for they are changing all the time.

It is a frequent criticism that advances in agricultural machinery have outstripped the farmer's capacity to operate it efficiently. But this must be so if the farmer is to remain a husbandman; for the demands of Nature and those of mechanics differ so much as to be, seemingly, in discord.

In a bulletin, a W.A.E.C. Machinery Instructor says: "In some respects the agricultural community tends to treat its machines in the same way as it does livestock, forgetting that man has to supply <u>all</u> the maintenance to his machines, whereas Nature carries out these functions in the animal world. What is called for is a new and improved attitude on the part of all people who use farm machinery; they must keep in step with the remarkable developments in mechanization; if they don't, the time will come when our mechanical progress will be a reliability rather than an asset."

Here is an example of the mind trained to the machine without an understanding of the mind of the husbandman who must live in harmony with Nature. How deplorable it would be if the farmer treated his livestock like machines! The writer himself seems aware of danger; for he calls for an "improved attitude" lest "mechanical progress" become a liability. He is asking that the farmer shall change his husbandlike attitude, because otherwise he will not treat machines according to the demands of mechanics. But these demands, as the writer himself points out, are diametrically opposed to those of Nature.

How then is it possible to have mechanical efficiency and natural efficiency at one and same time? The two have not the same meaning. Compare with the machine the energy built up and stored in a crop of, say, wheat or potatoes -- a process of amazing efficiency; or take the horse, who is capable of making infinitely greater use than any farm power machine of the calories supplied to him; further, he reproduces himself, is self-repairing, and returns all residues. But there is in fact no comparison; we must choose the one or the other. Our choice today is predominantly the industrial economy, with some mixtures of the industrial and the natural, but no blends; for they are incapable of blending.

Few words have been more overworked than "progress" and "efficiency". No right-minded person can wish but to contribute to genuine efficiency and the true progress of man. But things newer, bigger and faster than we have known before are not necessarily contributing anything to the welfare of man. I suppose we should all agree that smaller and smaller bombs, until we have none at all, would be progress, rather than bigger, faster and more powerful engines of destruction. But all destructive processes are not so obvious; we are liable to be interested in the ingenuity of the instruments, and thus overlook the effects of their misuse until these are overwhelmingly obtruding. In these circumstances, we find that we have to adapt ourselves and our systems in defence, the usual

outcome of which is that we are ultimately caught up in the system of the intruder.

Output per man is becoming the accepted standard rather than output per acre in quality and quantity. The machine is brutally efficient in displacing men and families from the countryside. Its progress is towards that end, and its efficiency stops there. Of itself it is incapable of producing better or more animals and crops than man can do without it, if he would. I read recently in the agricultural press that "even the most fervent apostles of mechanization have never claimed that any arable cultivation was performed better with tractors than with horses."

We have abundant evidence of the effects of mechanization from the United States. Carey McWilliams, in the introduction to his fully-documented book ILL FARES THE LAND, says: "When a new process displaces several thousand factory workers, it makes a graphic and unforgettable impression. But when a new gadget attached to a tractor throws thousands of farm hands out of employment, we have difficulty, first in comprehending the process, and second in imagining the consequences. For these hired hands are scattered about on different farms, not all dramatically bunched in one area; they just vanish one by one, into an anomalous and shadowy obscurity."

In this country there has been a steady decrease in the number of regulat farm workers, nearly 100,000 since 1939. Farmers are now dependent on prisoners of war and casual workers -- a dangerous position that mechanization may temporarily alleviate during the emergency, whilst thereby it will be aggravated for the future. A large tractor may plough and sow the land with only one or two men in attendance; but it has displaced a number of those very men who are later necessary for manual cultivations and harvest. This creates a need for still further mechanization and a demand for migrant or casual labour for such crops as beet and potatoes.

To quote again from ILL FARES THE LAND, Professor Horace Hamilton estimates that from three to five croppers or tenant families are commonly displaced by each new tractor purchased. Since 1935 -- in Texas — 10,000 farm families have been displaced each year. The author goes on to say, "The figures on the number of farm families actually displaced would not, however, indicate the full magnitude of the change that is being effected.... The process also threatens the structure of rural society as we have known it. With the collapse of the family-sized farm, the rural system of schools, county government and taxation, and the small towns themselves, are likewise affected....Mechanization ranks high among the causes for the profound social dislocations which in Texas have set numberless thousands of farm families adrift on the land." Referring to the combine harvester the author states, "In the first year of its widespread introduction (1926) the combine displaced an estimated 33,227 harvest hands; by 1928 it had displaced 50,000 workers. By 1930 the number of displaced workers was estimated at 109,900....With the reduction of costs through mechanization, many were quick to see the possibilities of profit in large-scale wheat farming." I would ask, "At whose, and at what expense?"

The world knows much of the destruction of land and society by large-scale mechanized wheat-farming, even if it has not yet wholly seen the danger. Obviously there must be a powerful motive behind this world-wide movement towards farm mechanization. It is not difficult to see that any farmer who equips himself ahead of his neighbour has scored a temporary lead of profit. I say temporary, because it follows that the neighbour must soon do the same. This process

goes on, not only between farms, but between competitor countries. Neither land nor rural society can long exist productively on that downward spiral. Zero is at the bottom. If output per man is to be the accepted basis of efficiency and we are to ignore the roots of agricultural inefficiency, clearly the absurd point of efficiency would be reached with <u>one man only</u> farming his mechanized paradise!

It is the tyranny of figures that is being ruthlessly applied to agriculture in a system evolved for urban industry. Can any accountant give an accurate figure-balance-sheet for any farm? Of course not. The factor of fertility alone, in land, crops or animals -- to give one example -- cannot be expressed in figures at all. Then why should we presume in an inaccurate system to compare the mechanical with the natural?

Use of the machine to relieve drudgery and increase food-supplies is in the interests of humanity, provided there are no detrimental effects. Examples of these are given in a report issued by the Industrial Health Research Board of the Medical Research Council. It says: "Many active people find it very boring to have to do work which calls for little physical movement or exertion. One result (of the mechanization of industry) has been an increase in repetition work, which, unlike the work of skilled craftsmen, is seldom interesting in itself. It also deprives the worker of the satisfaction and pleasure of making a complete article. In the late stage the effects are more serious; the worker tends to split up the job, and he concentrates on doing one part well, then forgets and hurries or is inefficient about another part. His work deteriorates, but he often does not realize this, since fatigue also makes him judge his work by lower standards."

I submit that the machine can convert much skilled into unskilled labour, imposing often a drudgery worse than it was intended to remove. Fewer skilled workers on the farm with higher pay individually is no compensation for the loss of skill in the aggregate. We solve a problem, and create or conceal a bigger one!

If the machine provided those displaced with another way of life equally good or with the means to profit by leisure, less could be said against its use. But it does not. The displaced migrate to add to social problems elsewhere, and at the same time accentuate the problems of the countryside.

We have been so preoccupied with the machine as a machine that we have not given due attention to the cumulative effects of its misuse; these are now great enough to make some impression even on the insensitive. Farmers have had to adopt whatever measures they could to cheapen production. Cheapness has frequently had to come before quality, with profit as the main underlying motive. But some are now alive to the evils inherent in the mechanized system.

That mechanization permits of evil I have no doubt, both from my own wide and long experience of machines in agriculture and in industry, and from the experience of others at home and abroad. I am prepared to agree that machines judiciously and rightly used, subjected to the skill of man, will serve also the interests of humanity. But they -- the machines -- <u>must</u> be subordinated to human skill; for this skill contributes towards the nobility of man.

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